"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

S/069/61/023/006/001/005
B119/B101

AUTHORS: Vakula, V. L., Voyutskiy, S. S.

TITLE: Adhesion of polymers. 9. New method of producing bonded strips for determining the mutual adhesion of elastomers

PERIODICAL: Kolloidnyy zhurnal, v. 23, no. 6, 1961, 672 - 678

TEXT: The method is based on the separate production of an adhesive film and its subsequent joining with the substrate foil. For the majority of the experiments, butadiene acrylonitrile rubber СКН-40 (SKN-40) (a) and polyisobutylene П-118 (P-118) (b) were used as adhesive and cellophane foil as substrate. From the latter, the glycerin serving as softener was previously extracted with water. The adhesive film was produced under drying in air by repeated application of 8 - 10% solution of the adhesive substance on percale strips, according to the layer thickness required. (a) was dissolved in benzene, (b) in gasoline. The adhesion of the bonded strips thus prepared was determined by an adhesion measuring instrument of the type ЦАИКЗ (TsNIKZ) through layer separation. The layers did not always separate smoothly so that the values measured

Card 1/3

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B119/B101

Adhesion of polymers...

are to be attributed to the cohesive forces. Similar experiments were conducted with elastomers of the type СКС-30-1 (SKS-30-1), СКС-30 (SKS-30), СКБ (SKB), СКС-30А (SKS-30A), СКИ (SKI), polychloroprene, as well as with polyamide and polyethylene. Results: The adhesiveness of the adhesive foil on the substrate increases with increasing layer thickness until the fabric relief of the percale is covered. Greater layer thickness does not increase adhesion any more. The layer thickness for which constant adhesion is reached is ∿0.015 for (b), and 0.03 g/cm^2 for (a). The adhesiveness of the adhesive on the substrate is independent of pressure treatment between 0.02 and 0.15 kg/cm^2. Residues of the solvent in the adhesive foil affect the adhesiveness in the following way: At a content of 12.5% benzene (related to the weight of the film), the separation resistance for (a) is 345 g/cm (cohesion), at a content of 4.25% benzene, 134 g/cm (adhesion), at 0.15% benzene, 177 g/cm, at 0% benzene, however, 169 g/cm. For (b) the separation resistance increases from 0 g/cm at a content of 10.7% gasoline (related to the weight of the adhesive foil) to 147 g/cm for a foil free of solvent (adhesion). The total evaporation of the solvent takes place after ∿30 hr at room temperature and optimum thickness of the foil. The adhesiveness of bonded strips not quite free

Card 2/3

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of solvent increases after longer standing (successive evaporation of the solvent). The width of the bonded strips does not affect adhesiveness. Experiments with the other previously mentioned materials produced identical results. Studies by B. A. Dogadkin (Sb "Prochnost' svyazi mezhdu elementami rezinotkanevykh izdeliy v proizvodstve i ekspluatatsii" (Binding strength between the components of rubber-fabric products in production and use), Goskhimizdat, M.-L., 1956, p. 16) and A. P. Poretskaya (Kolloidn. zh. 6, 153, 1940) are mentioned. There are 2 figures, 4 tables and 14 references: 13 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: W. M. Bright, Adhesion and Adhesives. John Wiley and Sons, N. Y., 1954, p. 130.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova Kompleksnaya laboratoriya polimerov (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov, Complex Laboratory of Polymers)

SUBMITTED: September 21, 1960

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33387
S/190/62/004/002/018/021
B101/B110

15 1120

AUTHORS: Voyutskiy, S. S., Gul', V. Ye., Chang Yin-hsi, Vakula, V. L.

TITLE: Adhesion of polymers to silicate glass

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 2, 1962, 285-293

TEXT: The authors studied the adhesion of polyisobutylene with different molecular weights (MW), type П-20, (P-20), П-85 (P-85), П-118 (P-118), П-200 (P-200), of natural rubber (NR) of polyisoprene СКИ (SKI), of butadiene acrylonitrile rubbers type СКН-18 (SKN-18), СКН -36 (SKN-36), СКН-40 (SKN-40), of polychloroprene (PCP) and of chloro sulfopolyethylene (CSPE) to ordinary window glass. Films on percale base were produced from an 8 - 10% solution of the elastomers in benzene. After removing the solvent these films were rolled on glass. After 30 min (with specimens subjected to heat treatment 30 min after the cooling) the force required for defoliation was measured by an adhesiometer of the TsNIKZ. For SKN-40 and P-58 it was found that adhesion becomes independent of the film thickness as soon as the thickness reaches about 0.0125 - 0.0150 g/cm^2. With PCP, however, adhesion increases with increasing film thickness since

Card 1/4

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Adhesion of polymers ...

this elastic polymer is strongly stretched in defoliation. Adhesion of P-118 and SKN-40 as a function of contact time (50 hr at 100°C) first increased rapidly and then slowly approached a final value. In the apolar P-118 whose molecules are more flexible than those of SKN-40 the final value was reached more rapidly. Adhesion as a function of temperature (heating to 160 - 180°C) gave exponential curves for NR and SKN-40 while adhesion of P-85 and PCP approached a final value. CSPE showed an S curve. The retarded increase in adhesion at 140 - 180°C can be explained either by the fact that a final value is reached or by thermal decomposition of CSPE. The following values are given:

	defoliation resistance, g/cm non heated	heated for 30 min at 100°C
P-118	162 (A)	223 (A)
NR	48 (A)	72 (A)
SKI	238 (A)	285 (C)
PCP	980 (A)	1110 (A)
CSPE	136 (A)	390 (A)
SKN-40	157 (A)	159 (A)

(A) denotes adhesive separation,

(C) denotes cohesive separation.

Card 2/4

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Adhesion of polymers ...

Hence the adhesion of elastomers to glass shows the same order as was observed in the adhesion to cellophane and polyamide films. Adhesion of polyisobutylene increased and defoliation became cohesive as soon as the MW decreased to approximately 20,000. It is conoluded that adhesion between elastomers and glass is due to diffusion processes of macromolecule ends into the glass or to penetration of the polymer into microcracks of the glass surface. A. Ya. Korolev, M. S. Aslanova, and A. G. Shvarts are mentioned. V. A. Kargin is thanked for discussions. There are 8 figures, 1 table, and 24 references: 14 Soviet and 10 non-Soviet. The four most recent references to English-language publications read as follows: W. A. Weyl, Symp. "Adhesion a. Adhesives", N. Y., J. Wiley a. Sons, 1954, p. 36; N. M. Trivisonno, L. H. Lee, S. M. Skinner, Industr. and Engng. Chem., 50, 912, 1958; J. E. Rutzler, Adhesives Age, 2, 39, 1959; D. Taylor, J. E. Rutzler, Industr. and Engng. Chem., 50, 928, 1958.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

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Adhesion of polymers ...

SUBMITTED: February 15, 1961

Card 4/4

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

33388
S/190/62/004/002/019/021
B110/B101

15.1420

AUTHORS: Gul', V. Ye., Chang Yin-hsi, Vakula, V. L., Voyutskiy, S. S.

TITLE: Adhesion of polymers to silicate glass. II. Nature of the adhesive bond rupture during the exfoliation of elastomer-glass joints

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 2, 1962, 294-298

TEXT: To study the nature of the adhesive bond rupture between polymer and silicate glass, water drops of equal size were applied with a pipette on the adhesive film or on glass before and after its contact with the elastomer. The outline of the drop was projected with a special lantern onto photographic paper after 30 sec contact with the substratum. The wetting B was calculated from the boundary angle θ between the water drop and the substratum: B = cos θ. The adhesion was determined according to V. Ye. Gul' et al. (Izv. vyssh. uch. zav.; Khimiya i khimicheskaya tekhnologiya, 2, 270, 1959). After contact with polyisobutylene (I) (molecular weight 200,000), the wetting of the glass sharply drops with increasing heating temperature while the control curve (without contact)

Card 1/3

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Adhesion of polymers to...

drops only slightly. This indicates a polymer residue growing with the contact temperature. Since the wetting of glass differs for every temperature and does not equal the wetting of the polymer film (0.01), the layer of I cannot be continuous. Thus, the destruction of the joint was of adhesive nature. Adhesion grows with the contact temperature. This and the reduced wetting after exfoliation give proof of the increase in adhesive strength of the glued joint with increasing contact temperature, and the remaining of an ever more continuous polymer layer. Similar dependences were observed for glass - natural rubber. In glass - polychloroprene, wetting after contact with the polymer depends hardly on the contact temperature but differs greatly from the wetting of glass that has not been in contact with a polymer. This is probably due to formation of a very thin, continuous film of polychloroprene (wetting 0.50) with high adhesion to glass. Tests with СКН-40 (SKN-40) butadiene acrylonitrile copolymer yielded no positive results owing to similar wetting of glass with and without polymer (high polarity). Quartz or carbon replicas were separated before and after contact with the adhesive, and studied with an ЭЛМИД-2 (ELMID-2) electron microscope. Many small polymer spots were observed on glass after 30 min contact at 140°C with I (molecular weight

Card 2/3

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Adhesion of polymers to...

200,000). Fewer but larger spots were found under equal conditions on natural rubber owing to lower strength of its adhesive bond. After 30 min contact at room temperature, polychloroprene left large portions due to its higher adhesion to glass. The authors thank N. M. Fodiman and Z. M. Ustinova for electron-microscopic studies. There are 3 figures and 6 references: 2 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: J. J. Bikerman, J. Colloid Sci., 2, 163, 1947; J. J. Bikerman J. Appl. Phys., 28, 1484, 1957; J. J. Bikerman, Proc. Second International Conference on Surface Activity, London, 3, 427, 1957; J. F. Murphy Adhesives Age, 3, 22, 1960.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

SUBMITTED: February 15, 1961

Card 3/3

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

ACCESSION NR: AR4042246 S/0081/64/000/008/S019/S019

SOURCE: Ref. zh. Khimiya, Abs. 8S98

AUTHOR: Vasenin, R. M.; Gromov, V. K.; Vakula, V. L.; Voyutskiy, S. S.

TITLE: Kinetics of the establishment of autoadhesion bond between polymers of different molecular weight

CITED SOURCE: Sb. Vy*sokomolekul. soyedineniya. Adgeziya polimerov. M., AN SSSR, 1963, 52-57

TOPIC TAGS: polymer, autoadhesion bond

TRANSLATION: The method of separation is used to investigate the kinetics of formation bond adhesion of five fractions of polyisobutylene with molecular weights of $0.75 \cdot 10^6$ to $2.4 \cdot 10^6$. Work of separation increases with time of contact by exponential law. The less the molecular weight of the fraction, the faster will the autoadhesion bond will be formed. An increase in the contact temperature has an analogous influence. Experimental data are compared with theoretical curves

Card 1/2

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of work of separation versus time, calculated for the same molecular weight. The constants necessary for the calculations were determined by experimental data for one of the studied fractions. Satisfactory coincidence of experimental and calculated data was found. In accordance with theoretical presentations the work of separation, determined experimentally with identical times of contact (from several minutes to several hours), is the reciprocal of the molecular weight to the 2/3 power. This attests to the sufficiently fast penetration of macromolecules from one sample into the other and to the decisive role of elastic deformations during separation of an autoadhesive bond. For unfractionated polymer the experimental values of the work of separation are 30% higher than these calculated; this is due to presence of low-molecular fractions. Kinetic constants at temperatures of 20, 40, 60, and 80° are calculated. Activation energy of the process is 7500 cal/mole.

SUB CODE: OC, GC ENCL: 00

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L 15508-63 EPR/EWP(j)/EPF(c)/EWT(m)/
BDS AFFTC/ASD Ps-4/Pc-4/Pr-4 RM/AW

ACCESSION NR: AP3006624 S/0076/63/037/009/2077/2081

AUTHOR: Gromov, V. K.; Neyman, M. B.; Vakula, V. L.; Voyutskiy, S. S.

TITLE: Study of the nature of the failure of a polymer-substrate adhesive bond by the method of tagged atoms

SOURCE: Zh. fizicheskoy khimii, v. 37, no. 9, 1963, 2077-2081

TOPIC TAGS: adhesive bond, adhesive bond failure, bond failure, joint failure, failure, polymer substrate adhesive bond, radiometric method, adhesive, tagged atom, tagged polymer, atactic polypropylene, tagged atactic polypropylene, substrate, nonradioactive atactic polypropylene, sheet silicate glass, copper foil, stripping test, adhesion testing machine, TsNIKZ adhesion testing machine, bond strength, radioactivity, substrate radioactivity, bonding time, bonding temperature, micromosaic type failure

ABSTRACT: The failure of polymer—substrate adhesive bonds has been studied by a highly sensitive radiometric method developed

Card 1/3

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by the authors employing a tagged polymer. Atactic polypropylene (molecular weight, 3 x 10^4) with tagged tertiary C atoms was used as an adhesive, and nonradioactive atactic polypropylene, sheet silicate glass, or copper foil, as a substrate. Stripping tests on percale strips coated with the adhesive were conducted with a TsNIKZ adhesion testing machine; the radioactivity of the stripped substrates was then measured. The results are given in the form of tables and graphs. The fact that all stripped substrates were radioactive indicates that after bond failure a certain amount of adhesive remains on the substrate. Radioactivity measurements showed that the quantity of adhesive remaining on the substrate increased with an increase in the time and temperature of contact between adhesive and substrate during specimen preparation. It is assumed that: 1) the adhesive remaining as nonpolymeric substrate is distributed in the form of "islets" rather than as a uniform layer and that in such case bond failure is "micromosaic" in type; 2) in the case of polymeric substrates of a higher molecular weight with three-dimensional or supermolecular network structures

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ACCESSION NR: AP3006624

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and considerable intermolecular forces, smaller quantities of the adhesive will remain on the substrates. Orig. art. has: 2 figures, and 2 tables.

ASSOCIATION: Akademiya nauk SSSR, Institut khimicheskoy fiziki (Academy of Sciences SSSR, Institute of Chemical Physics); Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M. V. Lomonosova (Moscow Institute of Fine Chemical Technology)

SUBMITTED: 17Oct63 DATE ACQ: 30Sep63 ENCL: 00

SUB CODE: CH, PH NO REF SOV: 005 OTHER: 008

Card 3/3

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

ACCESSION NR: AP4018155 S/0074/64/033/002/0205/0232

AUTHORS: Voyutskiy, S.S.; Vakula, V.L.

TITLE: Self-diffusion and interdiffusion phenomena in polymer systems

SOURCE: Upsekhi khimii, v.33, no.2, 1964, 205-232

TOPIC TAGS: Self-diffusion, interdiffusion, flexible molecule, elastomer, viscoelasticity, polymer structure, polymer compatibility, polymer adhesion.

ABSTRACT: I. This lengthy article discusses the self-diffusion and interdiffusion of polymers with flexible molecules (elastomers), and further methods of investigating this problem. II. Experimental Methods of Investigating Self-Diffusion and Interdiffusion in Polymer Systems. The radiometric and nuclear magnetic resonance methods are referred to as the most useful for the investigation of the polymer diffusion phenomena. III. The Mechanism of Polymer Self-Diffusion and Interdiffusion. The idea of the stack-typestructure of

Card 1/2

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ACCESSION NR: AP4018155

polymers, which is believed to account for their self- and inter-diffusion, is gaining increasing currency at present. IV. The effect of Time, Temperature and Concentration on Self-Diffusion and Interdiffusion in Polymers. V. The Effect of Molecular Structure and Properties on Self-Diffusion and Interdiffusion in Polymers. VI. The Importance of the Self-Diffusion and Interdiffusion Phenomena for the processiong and Use of Polymers. There is a very close connection between the structure and properties of macromolecules, on the one hand, and self-diffusion and interdiffusion of polymers, on the other. The methods to determine self-diffusion can also be used to investigate the internal friction in polymers.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 19 Mar64 ENCL: 00

SUB CODE: CH NR REF SOV: 075 OTHER: 065

Card 2/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

KAUROV, I.A.; VAKULA, V.S.

Effect of gibberellin on pollen germination and the growth of pollen tubes of woody plants. Sbor. nauch. rab. TSBS no.2:14-24 '61. (MIRA 15:7)

(Woody plants) (Gibberellin) (Pollen)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULA, V.S.

Ornamental forms of woody plants in the western part of White Russia. Sbor. nauch. rab. TSBS no.2:48-60 '61. (MIRA 15:7)
(White Russia—Plants, Ornamental)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULA, V.S.

Effect of gibberellin on shoot growth in ornamental forms of the ash, the elm, and the rowan. Sbor. nauch. rab. Bel. otd. VBO no.3:162-166 '61. (MIRA 14:12)
(Gibberellins) (Trees)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

KAUROV, I.A.; VAKULA, V.S.

Effect of gibberellin on the germination of pollen in woody plants. Bot. zhur. 46 no.8:1125-1133 Ag '61. (MIRA 15:1)

1. TSentral'nyy botanicheskiy sad AN Belorusskoy SSR, Minsk.
(Woody plants)
(Gibberellin—Physiological effect)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULA, V.S.

Seasonal dynamics of the accumulation of chlorophyll in leaves of some ornamental forms of woody plants. Biul. Glav. bot. sada no.46:46-52 '62. (MIRA 16:5)

1. TSentral'nyy botanicheskiy sad AN Belorusskoy SSR, Minsk.
(Chlorophyll) (Plants, Ornamental)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULA, V.S.

Light requirements of ornamental and typical forms of woody plants. Bot. zhur. 47 no.10:1426-1436 O '62.
(MIRA 15:12)

1. TSentral'nyy botanicheskiy sad AN Belorusskoy SSR.
(Plants, Ornamental)
(Plants, Effect of light on)
(Color of leaves)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

KAUROV, I.A.; VAKULA, V.S.

Effect of gibberellic acid on the dynamics of pollen germination of woody plants. Bot.; issl. Bel. otd. VBO no.5:181-184 '63. (MIRA 17:5)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULA, V.S. [Vakula, U.S.]; BIBIKOV, Yu.A. [Bibikau, IU.A.]

Vegetative reproduction of the ornamental and exotic forms of woody plants. Vestsi AN BSSR. Ser. biial. nav. no.1: 33-41 '64. (MIRA 17:6)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

SMOL'SKIY, N.V.; VAKULA, V.S.

Study of the intensity of photosynthesis in ornamental forms of woody plants as related to an evaluation of their photophily. Dokl. AN BSSR 8 no. 1:69-72 Ja '64. (MIRA 17:5)

1. TSentral'nyy botanicheskiy sad AN BSSR.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

TYKUL, V.S.

Optical properties of the leaves of ornamental woody plants. Bot.; issl. Bel. otd. VBO no.6:194-202 '64. (MIRA 18:7)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULA, V.V

94-4-8/25

AUTHOR: Vakula, V.V.

TITLE: The Use of Power Regeneration on the Electrified Section of the Tomsk Railway (Primeneniye rekuperatsii elektro-energii na elektrifitsirovannom uchastke Tomskoy zheleznoy dorogi)

PERIODICAL: Promyshlennaya Energetika, 1958, Vol.13, no.4, pp. 16 - 19 (USSR).

ABSTRACT: The article commences with a general discussion of regenerative braking of electric locomotives. When braking electric locomotives of the series ВЛ -22-М, the regenerative current and the field current of the traction motors passes through stabilising resistances. Hence, increase of regenerated current increases the voltage drop on the stabilising resistance, which, with constant excitation volts, leads to reduction of the regenerated current. The opposite occurs when the voltage in the contact circuit rises. Thus, in this locomotive, the stabilising resistance ensures automatic regulation of the regenerative current or of the braking effect of the locomotive, whatever the voltage in the contact circuit. Hitherto, regenerative braking has only been applied on mountain lines with slopes of 15 - 30% on which the traction sub-stations are equipped with reversible converting equipment.

Card1/3

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The Use of Power Regeneration on the Electrified Section of the Tomsk Railway

The use of grid-control rectifiers as inverters was intended to extend the application of regenerative braking to lines with lesser gradients, a development which has been retarded by the absence of suitable inverter equipment. This situation arose from an unwise stipulation that all the regenerated energy should be re-converted and returned to the primary power system. Experience on the electrified section of the Tomsk railway from Belov to Novo-Kuznetsk showed that most of the regenerated energy need not be re-converted and can be used directly to drive other trains. It was proposed to instal ballast resistances in the sub-stations to absorb energy that could not be returned to the system, but analysis of operating conditions showed that, in fact, the regenerated power could almost always be used to drive other trains in the section or to transmit power to other sections. In the early stages of use of regeneration, the overhead line voltage rose to 3 600 - 3 800 V. Three years' experience shows that it suffices to have on the line two trains that are consuming power for regenerative braking to be successful. The profile of the electrified line is described; there are considerable lengths

 with 8% gradient and other lengths with 2% gradient. Train

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The Use of Power Regeneration on the Electrified Section of the Tomsk Railway

speed on the 8% gradients is mainly governed by the automatic braking system.
Some of the locomotive drivers were at first opposed to the used of regenerative braking and certain operating troubles were experienced. The bearings of the exciters, which had not been used for some time, were damaged by fretting corrosion. Wheel slip and motor stalling were also sometimes observed; methods of overcoming this are discussed.
In general, however, regenerative braking has been a considerable success; the braking is more uniform and the ordinary brakes are much less frequently applied. The trains move at a steady speed on the steep slopes. Special recorders have been installed on locomotives at the suggestion of Zvyagin, fitter of the Belovo Depot. The device, attached to the speed recorder, shows just how the regenerative braking has been used. In the third quarter of 1956, the power economy on this section of line that resulted from regenerative braking was over 1 700 000 kWh and in the fourth quarter of 1956, about 3 800 000 kWh. There is 1 figure.

AVAILABLE: Library of Congress
Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

PAVLYUK, N.P., inzh.; VAKUL'CHIK, V.G., inzh.; SERDYUK, N.S., inzh.; KRYLOVA, A.S., inzh.; KHARITONOV, A.G., inzh.

Remote control and romote signaling apparatus for mine ventilation systems. Ugol.prom. no.5:64-66 S-O '62. (MIRA 15:11)

1. Luganskiy filial instituta avtomatiki Gosplana UkrSSR.
(Mine ventilation) (Remote control)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

20-118-4-11/61

AUTHOR: Vakulenko, A. A.

TITLE: On the Relation Between Stresses and Deformations in Inelastic Media (O svyazakh mezhdu napryazheniyami i deformatsiyami v neuprugikh sredakh)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 118, Nr 4, pp. 665-668 (USSR)

ABSTRACT: The author here attempted to construct a "theory of plasticity" by thermodynamic means, using to as great as possible an extent the generality and other important characteristic features of the basic laws of thermodynamics. The present paper reports on this attempt. The foundations of this theory are represented by the principle of the phenomenological consideration apart from the laws of thermodynamics of such a problem. This procedure is essentially equivalent to the possibility of separating at every point of the body under consideration an element representing an homogenuous thermodynamic system. Such a system must be considered to be closed. The energy equation for this system is put down as follows:

Card 1/4

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$$du = \sigma_{ik} d e_{ik} + dQ.$$

The second law of thermodynamic is given in the form of a relation being absolutely equivalent to the classical relations of Clausius: $dq < T\,ds$, u and s denoting the spatial densities of internal energy and of entropy of the element and σ_{ik} denoting the components of the stress tensor in an arbitrary orthogonal coordinate system, $d\varepsilon_{ik}$ denoting the components of the tensor of a very small modification of the deformation of the element, dq the density of the heat absorbed by the element in an infinitesimally short period, and T denoting the absolute temperature. According to the opinion of the author, more than the 7 parameters employed hitherto are required for the construction of a sufficiently rigorous and general theory of deformable media. When such subsidiary parameters are introduced, the element of the medium should be considered to be a system consisting of several homogeneous phases. These subsidiary parameters λ_n and the stresses σ_{ik} must be connected with the deformation of the element.

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The quantity $Tds - dq$ can be represented in the form

$$T\,ds - dq = \Psi_{ik}\, d\varepsilon^{p}_{ik}$$

and this expression must represent a positive definite differential form. Therefore, the coefficients $\Psi_{ik} = \Psi_{ki}$ must depend upon the velocities

$$\dot{\eta}^{p}_{ik} = d\varepsilon^{p}_{ik}/dt$$

These velocities must be certain "generalized points" and the coefficients Ψ_{ik} the corresponding thermodynamic forces. After the generalization of Onzager's principle (Onsager) the equation $du = \sigma_{ik} d\varepsilon_{ik} + Tds - \Psi_{ik} d\varepsilon^{p}_{ik}$ is obtained. Then an explicit representation for the equation $f = u - Ts$ is given. The equations deduced here describe the relations between the stresses and the deformations in certain primary isotropic media, which posses elasticity, viscosity and an "athermal plasticity".

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

On the Relation Between Stresses and Deformations in Inelastic Media 20-118-4-11/61

There are 4 references, 3 of which are Soviet

ASSOCIATION: Leningradskiy inzhenerno-stroitel'nyy institut (Institute for Architecture, Leningrad)

PRESENTED: July 26, 1957, by V. I. Smirnov, Member of the Academy

SUBMITTED: July 12, 1957

AVAILABLE: Library of Congress

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APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

24(8) SOV/20-126-4-13/62

AUTHOR: Vakulenko, A. A.

TITLE: A Thermodynamic Investigation of the Connection Between Stress and Deformation in Isotropic Elastically-plastic Media (Termodinamicheskoye issledovaniye svyazey mezhdu napryazheniyami i deformatsiyami v izotropnykh uprugo-plasticheskikh sredakh)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 4, pp 736 - 739 (USSR)

ABSTRACT: The differential equations (1) and (2), which were obtained on the basis of thermodynamical investigations of the connection between stress and deformation from other papers, are written down in the introduction; the investigation of the possibility of working out the thermodynamical basis by means of these general equations of the theory of the inelastic behavior of solids is given as the aim to be attained by this paper. First, the dissipation function (6) is developed as a function of the absolute temperature T and of the invariants of the velocity tensor, and herefrom the general equations (7) and (8) for the connection between stress and inelastic deformation are obtained. Next, the conditions for the conversion of equation (8)

Card 1/2

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

into a linear tensor equation are worked out, and finally, the equation (12) is developed for the components of the stress tensor. It is then stated that the equations (7), (8), and (12) contain all important experimental data describing the behavior of quasiisotropic solids. There are 3 references, 2 of which are Soviet.

ASSOCIATION: Leningradskiy inzhenerno-stroitel'nyy institut (Leningrad Institute of Structural Engineering)

PRESENTED: February 25, 1959, by Yu. N. Rabotnov, Academician

SUBMITTED: August 9, 1958

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

S/753/61/000/001/001/007

AUTHOR: Vakulenko, A. A.

TITLE: On the stress-strain relationship in nonelastic media.

SOURCE: Leningrad. Universitet. Matematiko-mekhanicheskiy fakul'tet. Issledovaniya po uprugosti i plastichnosti. no.11. 1961, 3-35.

TEXT: This theoretical paper develops a theory intended to provide means for the consideration both of time effects (transiency) and of temperature variations and heat exchanges in the rheological process of plasticity. In view of the difficulties encountered by an approach founded on molecular-kinetic theory (statistical physics), the present theory is based on the thermodynamic approach. The stress-strain relationships for an element of a solid body (its "rheological equations of state") have been directly derived from the first and second principle of thermodynamics. This procedure is developed first for the ideally elastic body and then for the deformation of nonelastic bodies in which "instantaneous" values of the thermodynamic state of the element are taken into account by means of "functions of state." The first part of the paper comprises a presentation of the general theory as an expansion of the development of earlier work by the author first published in 1954 (Theses of the conference on the theory of elasticity and plasticity and theoretical problems of

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structural mechanics, 22-25 December 1954. Izd-vo AN SSSR, 1954) and in 1958 (Akad. nauk SSSR, Dokl., v.118, no.4, 1958, and in Sbornik nauchn. trudov, LISI, no.29, Gosstroyizdat, 1958). The second part of the paper sets forth possible practical applications of the general equations. The general theory deals with a continuous medium or, if the medium cannot be regarded as homogeneous, then with sufficiently small elements of the given medium. The deformations are assumed to be small. In the thermodynamic approach employed here, the element of the solid body considered is regarded as having interchanges of heat, but not of mass, with its surroundings. It is noted that in an ideally elastic continuous medium all possible "instantaneous" states of the system can be regarded as single-valued points of a seven-dimensional manifold, but that in real media multiple-valued states occur. For example, in a real substance, two different stress values correspond to a given strain in the loading ("active" deformation) and unloading ("passive" deformation) states. The "time effect," that is, creep and "thermodiffusional" forms of non-elasticity, are also noted. Attention is drawn to the phenomenological approach to the problem by means of loading-unloading tests of specimens in which the work of deformation and the heat released by the specimen to the ambient are measured. Such tests have been performed in a significant volume at the Siberian Physical-Technical Institute under the general direction of M. A. Bol'shanov. In such tests, however, it was found that the deformation work per cycle was not equal to the heat

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

released to the ambient, but that, depending on the type of material tested, the antecedent treatment of the specimen, the temperature, the loading rate, and certain other test parameters, a difference of 15-20% obtains. This difference constitutes a "latent energy of deformation" (LED). While most of the past investigations of the LED were performed on metallic specimens, there is reason to anticipate that it may be especially significant in solid polymers, doubtlessly in connection with "structural defects" of real solid substances. These effects are attributed to (1) vacancies, (2) the presence of interstitial particles, (3) dislocations, (4) mosaic distortions, (5) grain-boundary distortions in a polycrystal. The resulting macroscopic effects, such as, "hardening," the Bauschinger effect, and others, may – from the energy point of view – translate deformation into LED. It is shown that these effects are comparatively small for "low-molecular" solids, such as metals, but are of considerable consequence in polymers. Issuing from the first and second principles of thermodynamics, the most general equations obtainable are developed for the stress-strain relationship in a body element. An attempt to generalize the Onsager symmetry principle – which, strictly speaking, is founded on statistical physics – to the present approach, in which no assumptions are made on the linearity of the phenomenological connections, is set forth. However, the substantiation of several basic assumptions made in the Onsager principle, including the so-called ergodic hypothesis, are questioned and, for the time being at

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least, the Onsager principle is regarded as a somewhat less dependable law of physics than the first and second principles of thermodynamics. Yet, the Onsager principle is regarded as a possible source of important future deductions. There are 2 figures and 24 references (15 Russian-language Soviet, 1 French, 3 English-language, and 5 Russian-language translation of English-language originals).

ASSOCIATION: Kafedra teorii uprugosti matematiko-mekhanicheskogo fakul'teta Leningradskogo gosudarstvennogo universiteta im. A. A. Zhdanova (Department of the Theory of Elasticity, School of Mathematics and Mechanics, Leningrad State University imeni A. A. Zhdanov).

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, A.A.

Stress-strain relations in isotropic and initially isotropic inelastic media. Issl. po uprug. i plast. no.2:3-47 '63.
(MIRA 16:8)
(Strains and stresses)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

BUGAKOV, I.I. (Leningrad); VAKULENKO, A.A. (Leningrad)

Theory of the creep of metals. Izv. AN SSSR. Mekh. i mashinostr. no.6:3-11 N-D '63. (MIRA 17:1)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

SOKOV, Yu.F.; PUTILOVA, Z.D.; VAKULENKO, A.A.; ZUBAREV, N.P.

Extracting aromatic hydrocarbons using a rotor-disk contractor.
Trudy BashNII NP no.6:207-217 '63. (MIRA 17:5)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, A.A. (Leningrad)

"Thermodynamics and plasticity problems"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

SOKOV, Yu.F.; PUTILOVA, Z.D.; KASTANOS, A.Z.; VAKULENKO, A.A.

Using a rotor-disk contactor to extract aromatic hydrocarbons with diethylene glycol. Trudy BashNII NP no.7:108-113 '64.
(MIRA 17:9)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

ARTYUMYAN, R.A. (Leningrad); VAKULENKO, A.A. (Leningrad)

Multiple loading of an elastoplastic medium. Izv. AN SSSR. Mekh. no.4:53-61 Jl-Ag '65.

(MIRA 18:12)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

ACC NR: AT7010534 SOURCE CODE: UR/2753/66/000/005/0188/0197

AUTHOR: Vakulenko, A. A.; Palley, I. Z.

ORG: none

TITLE: On the plasticity-theory problem for a medium subjected to deformations under variable temperatures

SOURCE: Leningrad. Universitet. Matematiko-mekhanicheskiy fakul'tet. Issledovaniya po uprugosti i plastichnosti, no. 5, 1966, 188-197

TOPIC TAGS: plasticity theory, ~~loading-rate, strain-rate~~ stress load, plastic deformation

ABSTRACT: Deformation processes at constant temperatures are usually discussed in the theory of plasticity. Although publications have recently appeared concerning plastic deformation at variable temperatures, the dependence of the rheological behavior of the medium on time was not considered. In the present article an attempt is made to analyze the effect of the rate of loading and of the temperature on the stress-strain relations in a medium. The isothermal-static-axial tensile tests of metallic (i.e., pure metals and alloys with stable structure) cylindrical specimens are analyzed first, and the effect of the rate of loading and of the temperature on the resistance of the material to the plastic deformation is examined, and the interdependence among the rate-of-loading (i.e., time-dependent stress increase) parameter, elongation, and temperature is discussed in detail and illustrated by diagrams. The dependence of

Card 1/2 UDC: none

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

ACC NR: AT7010534

the temperature variation on the modulus of elasticity and the yield point of the medium is also examined. A conclusion is drawn that a substantiated universal theory of plasticity for a medium exposed to a variable temperature can be developed only by taking into account the dependence of the stresses and strains on the rate of loading. The procedure for establishing such a theory is outlined. Orig. art. has: 5 tables and 15 formulas.

[WA-52]
[VK]

SUB CODE: 20/ SUBM DATE: 23Mar65/ ORIG REF: 004/ OTH REF: 001

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

SHERMAN, S.I.,prof.; KUZ'MIN, D.S.,dotsent.; ROZANOVA, L.M.; KISELEVA, A.N.; POVIRGO, N.S.; VAKULENKO, A.D.

Comparative evaluation of the effectiveness of certain therapy methods in chronic leukemia; x rays, radioactive phosphorus, urethan, embichine, arsenic, and myleran. Reports: No.2, 3. [with summary (MIRA 11:5) in English, pp. 62-63]

1. Iz Leningradskogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo instituta perelivaniya krovi (dir.-dotsent A.D. Belyakov, nauchnyy rukovoditel'-chlen-korrespondent AMN SSSR prof. A.N. Filatov).

(LEUKEMIA, therapy,
comparison of various methods (Rus)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, A. D.

SHERMAN, S.I., professor; KUZ'MIN, D.S., dotsent; ROZANOVA, L.M.; KISELEVA, A.N.; POVERGO, N.S.; VAKULENKO, A.D.

Comparative evaluation of the effectiveness of various methods of treating chronic leucosis. Report No.1: Treatment of chronic leucosis by X rays [with summary in English, p. 64] Probl. gemat. i perel. krovi 2 no.1:28-32 Ja-F '57 (MLRA 10:4)

1. Iz gematologicheskoy kliniki (zav.-prof. S.I. Sherman) Leningradskogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo instituta perelivaniia krovi (dir.-dotsent A.D. Belyakov; nauchnyy rukovoditel'-chlen-korrespondent AMN SSSR prof. A.N. Filatov)

(LEUKEMIA, ther.
radiother. of chronic leukemia)
(RADIOTHERAPY, in various dis.
leukemia, chronic)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, A.D.

Change in the method of determining blood prothrombin. Lab. delo 3 no.1:18-19 Ja-F '57 (MLRA 10:4)

1. Iz fakul'tetskoy terapevticheskoy kliniki (i.o. zav.-dotsent A.A. Gol'denshteyn) Kubanskogo meditsinskogo instituta.
(PROTHROMBIN)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, A.D., aspirant

Treatment of chronic myelosis with myleran. Akt.vop.perel.krovi no.6: 119-126 '58. (MIRA 13:1)

1. Gematologicheskaya klinika Leningradskogo instituta perelivaniya krovi (zav. klinikoy - prof. S.I. Sherman).
(LEUKEMIA) (METHANESULFONIC ACID)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

SHERMAN, S.I., prof.; KUZ'MIN, D.S., dots.; ROZANOVA, L.M.; KISELEVA, A.N.; POVERGO, N.S.; VAKULENKO, A.D.

Comparative evaluation of the effectiveness of certain therapeutic methods in chronic leukemias; roentgen rays, radioactive phosphorus, urethan, embichin, arsenic, myleran. Report No.4 [with summary in English, p.61]. Probl.gemat. i perel.krovi 4 no.1:17-20 Ja-F '59. (MIRA 12:2)

1. Iz gematologicheskoy kliniki (zav. - prof. S.I. Sherman) Leningradskogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo instituta perelivaniya krovi (dir. - dots. A.L. Belyakov, nauchnyy rukovoditel' - chlen-korrespondent AMN SSSR prof. A.N. Filatov).

(LEUKEMIA, therapy,
comparison of various radiol. & chem. methods (Rus))

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

SHERMAN, S.I., prof.; KUZ'MIN, D.S., dotsent; ROZANOVA, L.M.; KISELEVA, A.N.; POVERGO, N.S.; VAKULENKO, A.D.

Comparative evaluation of the effectiveness of certain therapeutic methods in chronic leukemias; roentgen rays, radioactive phosphorus, urethane, embichine, arsenic, myleran. Report No.5: Probl. gemat. i perel. krovi 4 no.5:14-18 My '59. (MIRA 12:7)

1. Iz gematologicheskoy kliniki (zav. - prof. S.I. Sherman) Leningradskogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo instituta perelivaniya krovi (dir. - dotsent A.D. Belyakov, nauchnyy rukovoditel' - chlen-korrespondent AMN SSSR prof. A.I. Filatov).
(LEUKEMIA, therapy,
comparison of various methods (Rus))

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, A.D.

Bone marrow hematopoiesis in patients with chronic myelosis before and after treatment with myleran. Probl.gemat.i perel.krovi 4 no.11: 58-60 N '59. (MIRA 13:3)

1. Iz gematologicheskoy kliniki (zaveduyushchiy - prof. S.I. Sherman) Leningradskogo ordena Trudovogo Krasnogo Znameni nauchno-issledovatel'skogo instituta perelivaniya krovi (direktor - dotsent A.D. Belyakov).
(BUSULFAN therapy)
(LEUKEMIA, MYELOCYTIC therapy)
(HEMATOPOIETIC SYSTEM pharmacol.)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, A.D.

Leukemias following X-ray therapy. Probl. gemat. i perel. krovi 5 no.3:56-58 Mr '60. (MIRA 14:5)

1. Iz kliniki gospital'noy terapii (zav. - dotsent V.Ye.Bogdanov) Krasnodarskogo meditsinskogo instituta i 1-go terapevticheskogo otdeleniya Krasnodarskoy krayevoy bol'nitsy (glavnyy vrach G.V. Novitskaya).
(RADIATION—PHYSIOLOGICAL EFFECT) (LEUKEMIA)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

SHERMAN, M.D.; [illegible]

[illegible] phosphatase content in neutrophils in health and in certain diseases of the hemopoietic system. Terapevt. arkh. 27 no.2 [illegible] (MIRA 12:8)

1. Kafedra [illegible] terapii fakul'teta [illegible] meditsinskogo [illegible].

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, A.I., inzh.

All-Union conference on the use of X-rays in studying materials. Mont. i spets. rab. v stroi. 23 no.12:24-25 D '61. (MIRA 15:2)

1. Nauchno-issledovatel'skaya laboratoriya tresta Vostometallurgmontazh.
(X rays—Industrial applications)
(Materials—Testing)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

PASHINSKIY, V.; VAKULENKO, G.

All-cast small bell. Metallurg 7 no.10:26-27 O '62.
(MIRA 15:9)
(Blast furnaces--Design and construction)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, G., inzh.

Water covered roofs. Zhil. stroi. no.6:26 '65. (MIRA 18:10)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, G.A., inzh.

Marine diesel engines with automatic control. Mashinostroenie no.6:65-67 N-D '62. (MIRA 16:2)
(Marine diesel engines)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, G.A.

The DGA50-9 and DGA25-9 automatic marine diesel generators. Biul.-tekh.-ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.inform. no.11: 86-87 '62. (MIRA 15:11)

(Diesel electric power plants)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, G.A., inzh.

The DGA50-9 and DGA25-9 automatic diesel generators.
Energomashinostroenie 9 no.7:12-14 Jl '63. (MIRA 16:7)

(Diesel electric power plants)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, G.A.

Some characteristics of the maintenance of overhead contact systems under the conditions of the Maritime Territory. Elek. i tepl. tiaga 9 no.11:19 N '65. (MIRA 19:1)

1. Zamestitel' nachal'nika Vladivostokskogo uchastka energosnabzheniya.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

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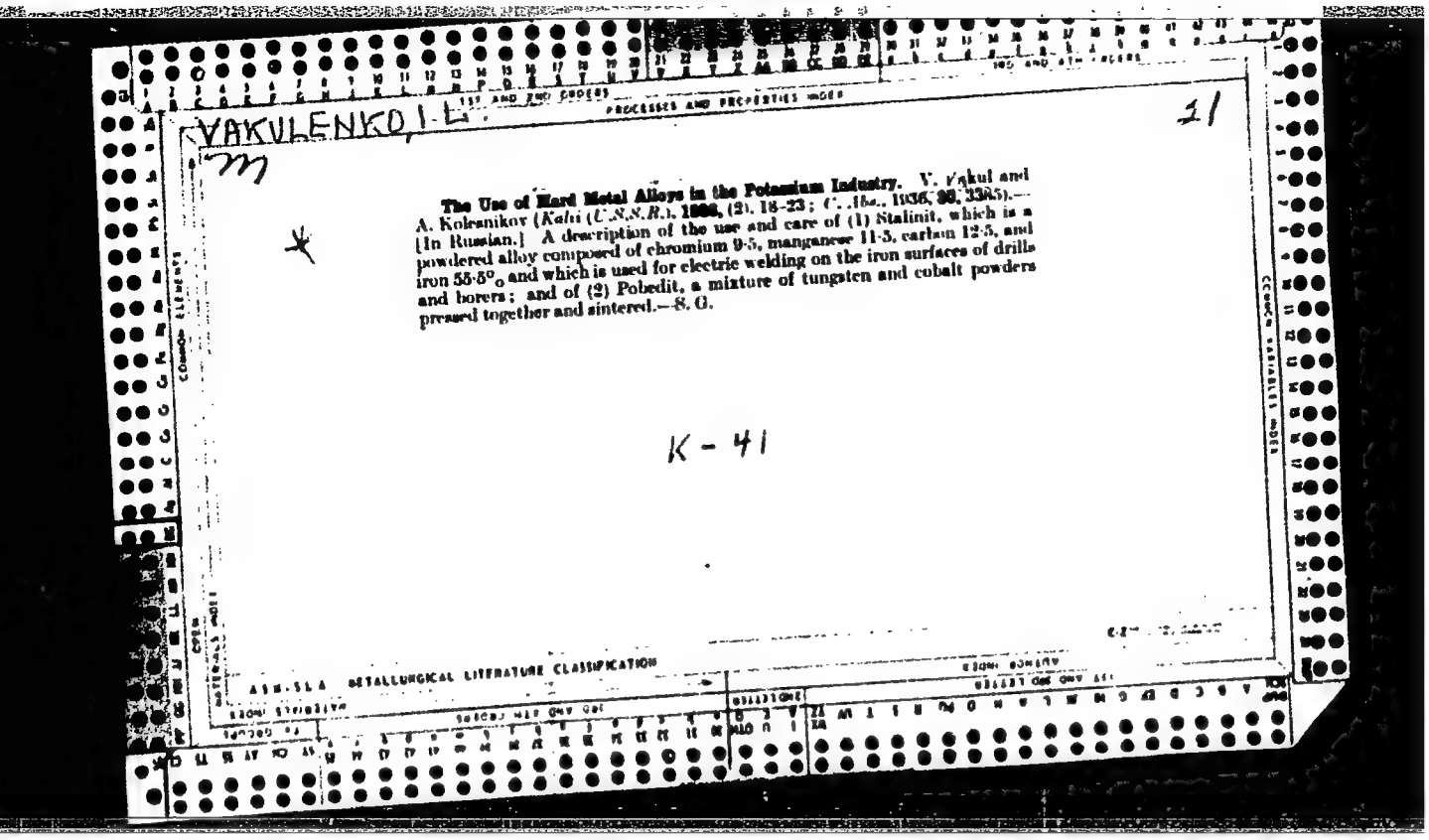

VAKULENKO, I. L.

21

The Use of Hard Metal Alloys in the Potassium Industry. V. Vakul and A. Koksnikov (*Kali* (*U.S.S.R.*), 1936, (2), 18–23; *C. Abs.*, 1936, **30**, 3385).—[In Russian.] A description of the use and care of (1) Stalinit, which is a powdered alloy composed of chromium 9·5, manganese 11·5, carbon 12·5, and iron 55·5% and which is used for electric welding on the iron surfaces of drills and borers; and of (2) Pobedit, a mixture of tungsten and cobalt powders pressed together and sintered.—S. G.

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ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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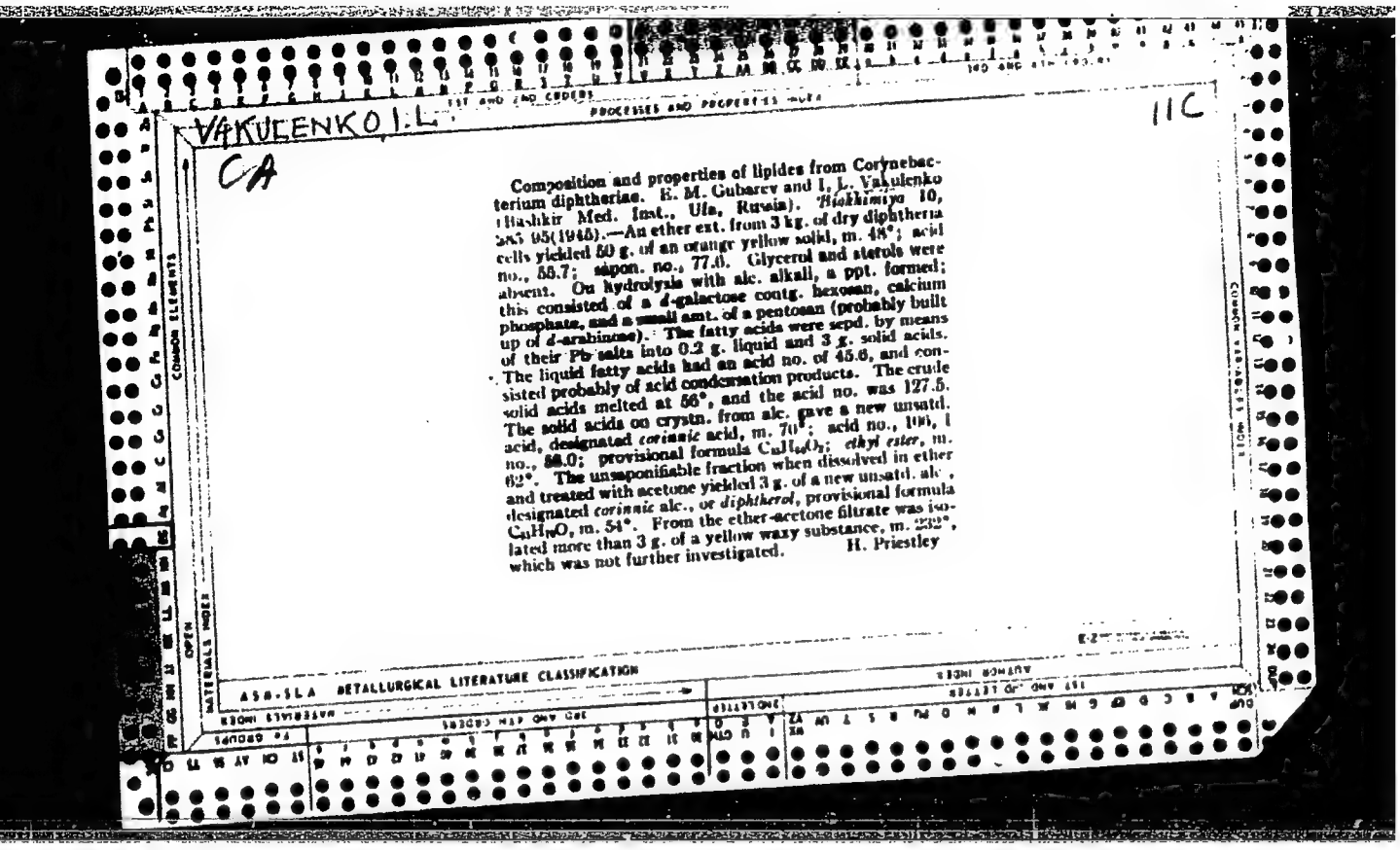

VAKULENKO I.L.

CA

11C

Composition and properties of lipides from Corynebacterium diphtheriae. E. M. Gubarev and I. L. Vakulenko (Bashkir Med. Inst., Ufa, Russia). *Biokhimiya* 10, 285-95(1945).—An ether ext. from 3 kg. of dry diphtheria cells yielded 50 g. of an orange yellow solid, m. 48°; acid no., 55.7; sapon. no., 77.0. Glycerol and sterols were absent. On hydrolysis with alc. alkali, a ppt. formed; this consisted of a *d*-galactose contg. hexosan, calcium phosphate, and a small amt. of a pentosan (probably built up of *d*-arabinose). The fatty acids were sepd. by means of their Pb salts into 0.2 g. liquid and 3 g. solid acids. The liquid fatty acids had an acid no. of 45.6, and consisted probably of acid condensation products. The crude solid acids melted at 56°, and the acid no. was 127.5. The solid acids on crystn. from alc. gave a new unsatd. acid, designated *corinnic* acid, m. 70°; acid no., 100, I no., 88.0; provisional formula $C_{18}H_{30}O_2$; *ethyl ester*, m. 62°. The unsaponifiable fraction when dissolved in ether and treated with acetone yielded 3 g. of a new unsatd. alc., designated *corinnic* alc., or *diphtherol*, provisional formula $C_{30}H_{50}O$, m. 54°. From the ether-acetone filtrate was isolated more than 3 g. of a yellow waxy substance, m. [illegible]°, which was not further investigated. H. Priestley

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VAKULENKO, I. L.

Rest nitrogen (RN) in cancer patients. I. L. Vakulenko, I. P. Kelyukh, and N. Ya. Sergeev. *Materialy po Bor'be Zlokachestvennymi Opukholyami* 1954, No. 4, 17-20; *Referat. Zhur. Khim., Biol. Khim.* 1955, No. 7949.—The RN is increased in the blood of cancer patients. Under normal conditions blood RN was 26.5 mg.%. In cancer patients it was 41.2 mg.%. Greatest deviations from the normal were observed in cancer of the lip, lowest in cancer of the stomach. Postoperatively (surgery, Ra or Röntgen-ray therapy) the blood RN first rises, then declines. B. S. Levine. MD

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VAKULENKO, I.M., kombayner

High-capacity potato combine. Mekh.sil'.hosp. 9 no.11:7 N '58.
(MIRA 11:12)

1. Kolkhoz "Shlyakh Illicha," Brusilovskogo rayona, Zhitomirskoy oblasti.

(Potato digger (Machine))

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, Konstantin Nikolayevich, aspirant

Calculation of operating conditions of an autonomous system consisting of a generator and an asynchronous motor. Izv. vys. ucheb. zav.; elektromekh. 3 no.12:65-71 '60. (MIRA 14:5)

1. Kafedra elektricheskikh mashin Kiyevskogo politekhnicheskogo instituta.

(Electric driving)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, Konstantin Nikolayevich, aspirant

Determination of optimum operating conditions of an autonomous a.c. system. Izv. vys. uch. zav.; elektromekh. 5 no.8:876-881 '62. (MIRA 15:8)

1. Kafedra elektricheskikh mashin Kiyevskogo politekhnicheskogo instituta.

(Electric motors, Induction)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

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VAKULENKO, K.N., kand. tekhn. nauk

Method for comparing traction characteristics and characteristics of a.c. transmission in an automonous transport system. Energ. i elektrotekh. prom. no.3:62-64 Jl-S '64. (MIRA 17:11)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

KUZNETSOV, Yu.; IVANOV, Yu.; VAKULENKO, M., deputat Verkhovnogo Soveta RSFSR.

Leading builders. Kozh.-obuv.prom.. 2 no.8:14 Ag '60. (MIRA 13:9)

1. Brigadir malyarov SU-9 Biyskogo tresta (for Vakulenko).
(Construction workers)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

SOCHILOVA, A.A.; BUYANOVSKAYA, I.S.; KENINA, A.Ye.; DMITRIYEVA, V.S.; FURER, N.M.; BELYAYEVA, L.A.; KUVSHINOVA, Ye.V.; VAKULENKO, N.A.; ZAMUKHOVSKAYA, A.N.; LEONOVA, A.G.

Agar diffusion method for determining the activity of antibiotics. Trudy VNIIA no.1:10-26 '53. (MLRA 8:1)
(Antibiotics--Testing) (Bacteriology--Culture and culture media)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N. A., Cand Biol Sci -- (diss) "A new standard "NV" test-culture for standardization of the activity of various antibiotics." Mos, 1958. 19 pp (Acad Sci USSR, Inst of Microbiology), 170 copies (KL, 35-58, 106)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.A.

Selection and study of the properties of a new NV test-culture for the standardization of the activity of various antibiotics. Antibiotiki 4 no.5:79-83 S-O '59. (MIRA 13:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(ANTIBIOTICS pharmacol.)
(BACILLUS pharmacol.)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.A.

Sporogenic test microbe NV-2 for the rapid determination of activities of penicillin and streptomycin. Antibiotiki 4 no.6:104-107 N-D '59. (MIRA 13:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(PENICILLIN pharmacol.)
(STREPTOMYCIN pharmacol.)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.A.

Determination of erythromycin in serum and urine by the agar diffusion method. Antibiotiki 6 no.4:315-318 Ap '61.
(MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(ERYTHROMYCIN)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

KONDRAT'YEVA, A.P.; VAKULENKO, N.A.; TEBYAKINA, A.Ye.; BRUNS, B.P.

Kinetics of the inactivation of erythromycin in aqueous solutions.
Antibiotiki 6 no.6:541-547 Je '61. (MIRA 15:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(ERYTHROMYCIN)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

YAKHONTOVA, L.F.; BRUNS, B.P.; CHEKULAYEVA, Yu.S.; SHELLENBERG, N.N.; VAKULENKO, N.A.; KOVARDYKOVA, S.N.

Choice of the optimal cationite in producing streptomycin by means of ion-exchange sorption. Med. prom. 15 no.1:21-29 Ja '61. (MIRA 14:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(STREPTOMYCIN) (ION EXCHANGE)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

YAKHONTOVA, L.F.; BRUNS, B.P.; CHEKULAYEVA, Yu.S.; SHELLENBERG, N.N.; VAKULENKO, N.A.; KOVARDYKOVA, S.N.

Production of highly purified streptomycin sulfate by means of carboxycation exchange resins. Med. prom. 15 no.6:26-32 Je '61. (MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(STREPTOMYCIN)
(ION EXCHANGE RESINS)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

YERMAKOVA, N.M.; KORCHAGIN, V.B.; YAKULENKO, N.A.; SIDOROVA, A.I.

Physical and chemical methods for determining antibiotics. Report No.12: Comparison of physical and chemical methods in the determination of the antibiotic, erythromycin. Med. prom. 15 no.11:50-52 N '61. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov. (ERYTHROMYCIN)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

TEBYAKINA, A.Ye.; VAKULENKO, N.A.

Biological method for determining the activity of oleandomycin during its isolation and chemical purification. Antibiotiki 7 no.4:366-369 Ap '62. (MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(OLEANDOMYCIN)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.A.

Biological method for determining the activity of phytobacteriomycin at all stages of its production. Antibiotiki 7 no.5:476-478 My '62. (MIRA 15:4)

1. Laboratoriya mikrobiologicheskikh metodov kontrolya (zav. A.Ye.Tebyakina) Vsesoyuznogo nauchno-issledovatel'skogo instituta antibiotikov.

(ANTIBIOTICS)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

KAZAREVA, Ye.N.; KUTSKAYA, I.P.; VAKULENKO, N.A.; PREOBRAZHENSKAYA, Ye.V.; GLAGOVSKAYA, R.S.

Water-soluble erythromycin salt. Antibiotiki 7 no.6:506-510 Je '62. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(ERYTHROMYCIN)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.A.

Determination of oleandomycin in the blood serum tissues, and body fluids by the agar diffusion method. Antibiotiki 8 no.1: 90-94 Ja'63. (MIRA 16:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(OLEANDOMYCIN) (CHEMISTRY, MEDICAL AND PHARMACEUTICAL)

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

STOROZHEV, I.A.; EYDEL'SHTEYN, S.I.; VAKULENKO, N.A.

Pharmacology of odeandomycin. Antibiotiki 9 no.9:824-828 S '64. (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

KORCHAGIN, V.B.; MITRONOVA, R.M.; VAKULENKO, N.A.

Spectrophotometric determination of erythromycin. Antibiotiki 9 no.9:851-854 S '64. (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva.

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.A.

Microbiological study of triacetyloleandomycin. Antibiotiki 9 no.11:1017-1020 N '64. (MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.N.(Vinnitsa)

Utilization of automatic home electric refrigerators for the production of histological sections from frozen specimens. Arkh. pat. 18 no.1:121 '56. (MLRA 9:6)

1. Iz Vinnitskoy psikhonevrologicheskoy bol'nitsy (glavnyy vrach- F.A. Golubtsov)
(REFRIGERATION,
refrigerators for frozen histol. specimens (Rus))
(HISTORY,
frozen specimens, refrigerators for (Rus))

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.N., assistent

Pathologic histologic changes in the central nervous system and the solar plexus ganglia in psychoses resulting from uremia. Sbor. nauch.trud.Vind.er.med.inst. 18 no.2:57-65 '56. (MIRA 16:2)

1. Kafedra patologicheskoy anatomii (zav. kafedroy dotsent N.V. Konstantinovich) Vinnitskogo gosudarstvennogo meditsinskogo instituta. Nauchnyy rukovoditel' raboty - zasluzhennyy deyatel' nauk prof. M.K. Dal'.
(NERVOUS SYSTEM) (PSYCHOSES) (UREMIA)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.N.

Pathoanatomical changes in the brain in psychoses developing in a uremic condition with a pronounced amentive syndrome. Vop. psikh. no. 3:351-357 '59. (MIRA 13:10)

1. Vinnitskaya psikhonevrologicheskaya bol'nitsa.
(BRAIN--DISEASES) (PSYCHOSES) (UREMIA)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.N. (Vinnitsa)

Histological changes in the central nervous system in uremia without mental disorders. Arkh.pat. 21 no.4:39-45 '59. (MIRA 12:12)

1. Iz kafedry patologicheskoy anatomii (zav. - dots. N.V. Konstantinovich) Vinnitskogo meditsinskogo instituta (dir. - dots. S.I. Korkhov; nauchnyy rukovoditel' raboty - zasluzhennyy deyatel' nauki prof. M.K. Dal').

(CENTRAL NERVOUS SYSTEM, pathol.
in uremia without ment. disord. (Rus))
(UREMIA, pathol.
CNS (Rus))

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, N.N.

Cholesteatoma. Vop. psikh. no.4:354-361 '60. (MIRA 15:2)

1. Vinnitskaya psikhonevrologicheskaya bol'nitsa. Vneshtatnyy nauchnyy sotrudnik Instituta psikhiatrii AMN SSSR.
(BRAIN--TUMORS)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

VAKULENKO, O.V.; KIREY, G.G.; LISITSA, M.P.

Temperature effect on the infrared spectra of organosilicon compounds. Part 1. Crystalline hexaethyldisiloxane. Opt. i spektr. 11 no.2:196-202 Ag '61. (MIRA 14:8)
(Infrared rays) (Disiloxane—Spectra)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1"

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L 02223-67 EWT(l)/EWT(m)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AR6013678 SOURCE CODE: UR/0058/65/000/010/E082/E083

AUTHOR: Vakulenko, O. V.; Lisitsa, M. P. 21

TITLE: Absorption of infrared radiation by free carriers in silicon at high temperatures 18 7/ 93 B

SOURCE: Ref. zh. Fizika, Abs. 10E674

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 508-513

TOPIC TAGS: ir absorption, silicon, semiconductor carrier, high temperature phenomenon, phonon scattering, carrier scattering, temperature dependence, IR radiation

ABSTRACT: An investigation was made of the absorption of sufficiently pure Si in the 1-15 μ region, at temperatures above the characteristic temperature of optical phonons. A comparison of the obtained data with the corresponding theories has shown that no scattering of the carriers by the optical phonons occurs. The dependence of the coefficient of absorption on the wavelength and its magnitude are in good agreement with the theory that proposes that the interaction between the carriers and the acoustic branches predominates. However, the change of the absorption coefficient with temperature at fixed wavelengths is more abrupt than follows from the theoretical formula. [Translation of abstract]

SUB CODE: 20

Card 1/1

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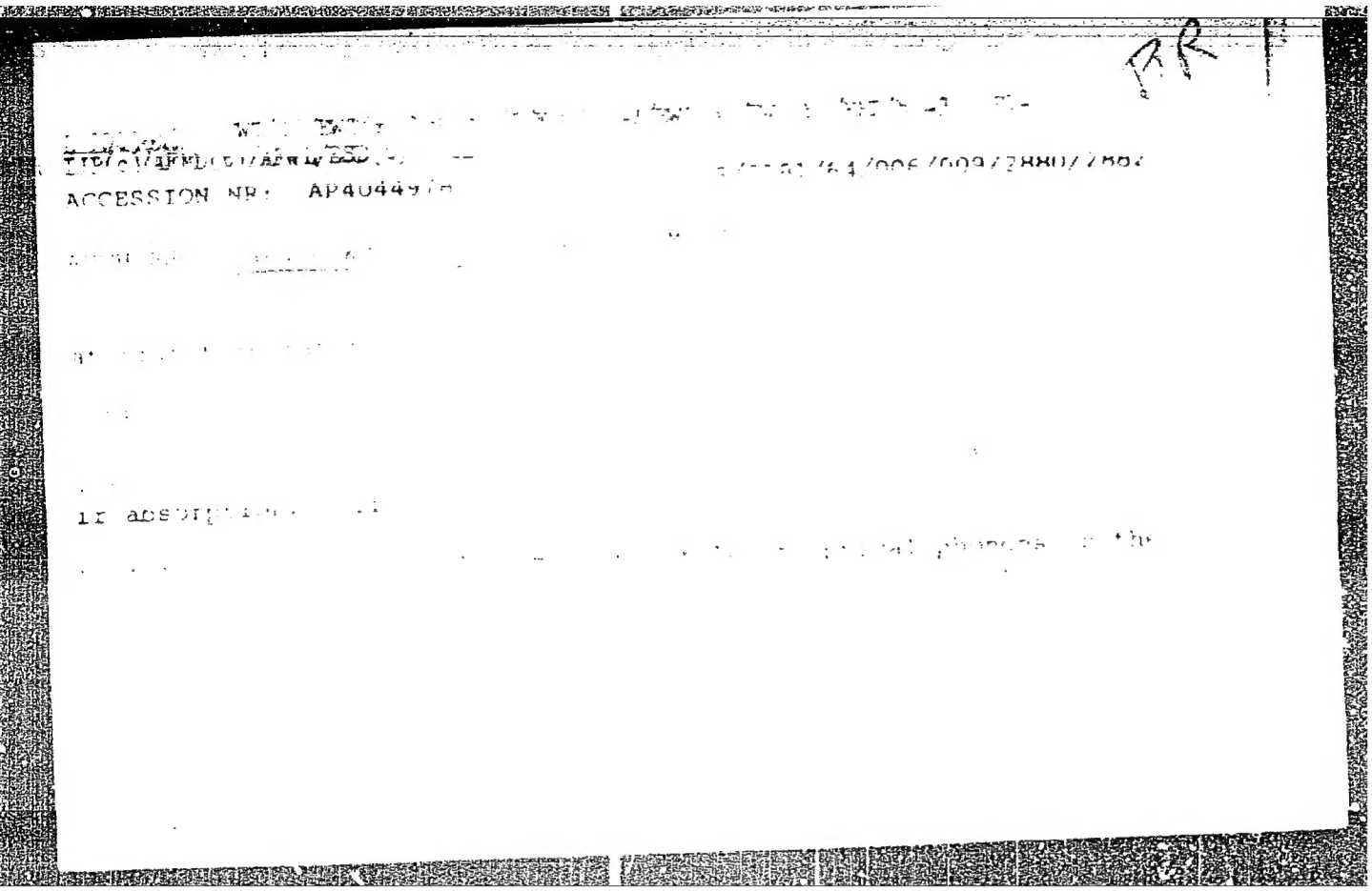

ACCESSION NR: AP4044

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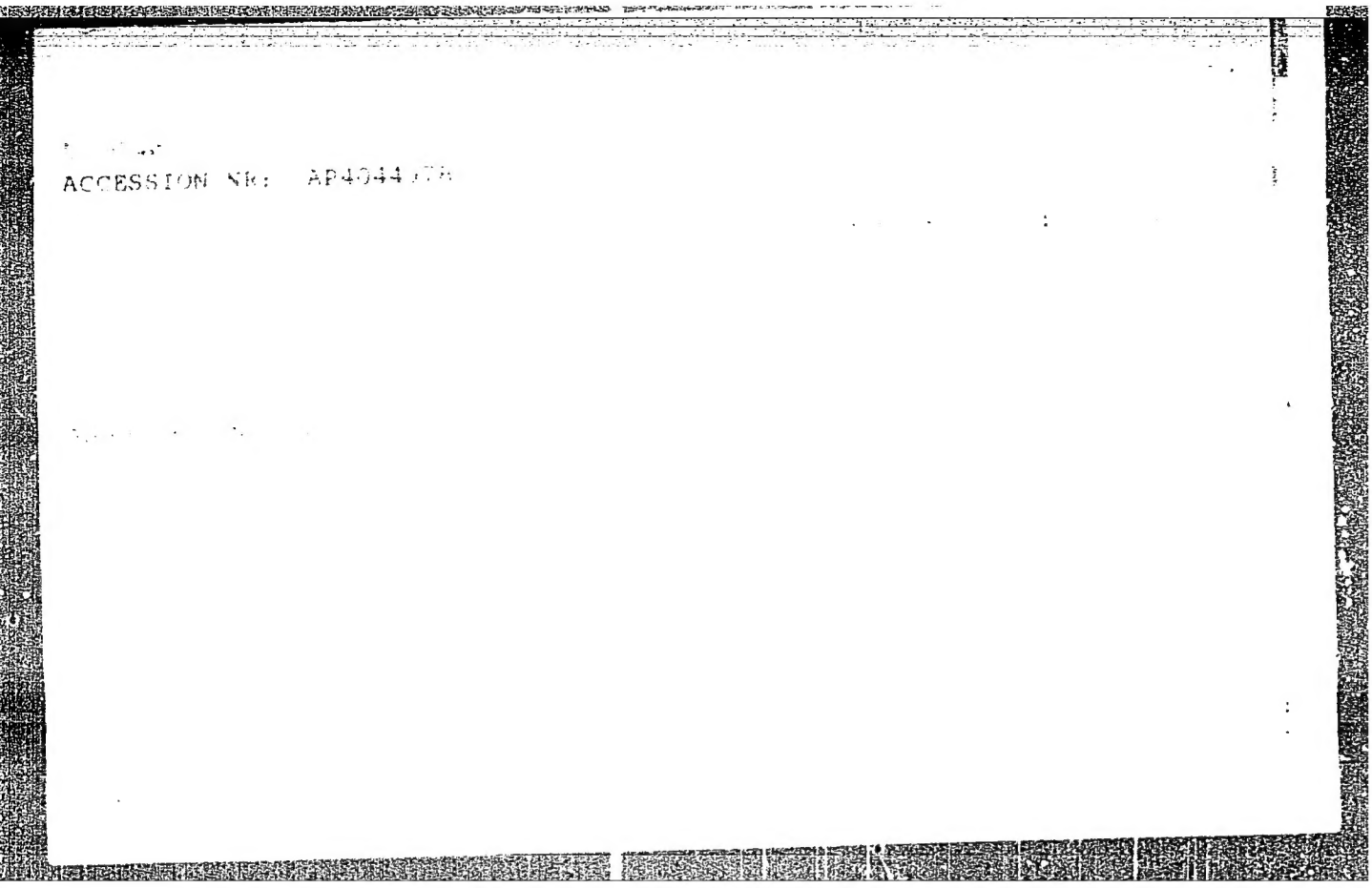

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"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001858420002-1

ACCESSION NR: AP4040938 S/0185/64/009/006/0676/0680

AUTHOR: Vakulenko, O. V.

TITLE: Determination of the optical density of semiconductors in the infrared region of the spectrum

SOURCE: Ukrayins'ky*y fizy*chny*y zhurnal, v. 9, no. 6, 1964, 676-680

TOPIC TAGS: Optical density, infrared, infrared transmission, optical density, infrared reflectivity, infrared semiconductor transmission, semiconductor optical density

ABSTRACT: The curves of the errors in optical density determinations of semiconductors by transmission are calculated. It is shown that on measurements with one sample for a semiconductor with a high reflective capacity it is advisable to use devices weakening the intensity of the reference beam. In the case of measurement with two samples with a corresponding choice of measured values the optimal conditions of measurements do not depend on the reflective capacity of the sample. "I express great thanks to Doctor of Physical-Mathematical Sciences M. P. Ly*sy*tsi for his interest in this work and for his consultation." Orig. art. has 13 numbered equations.

Card 1/2

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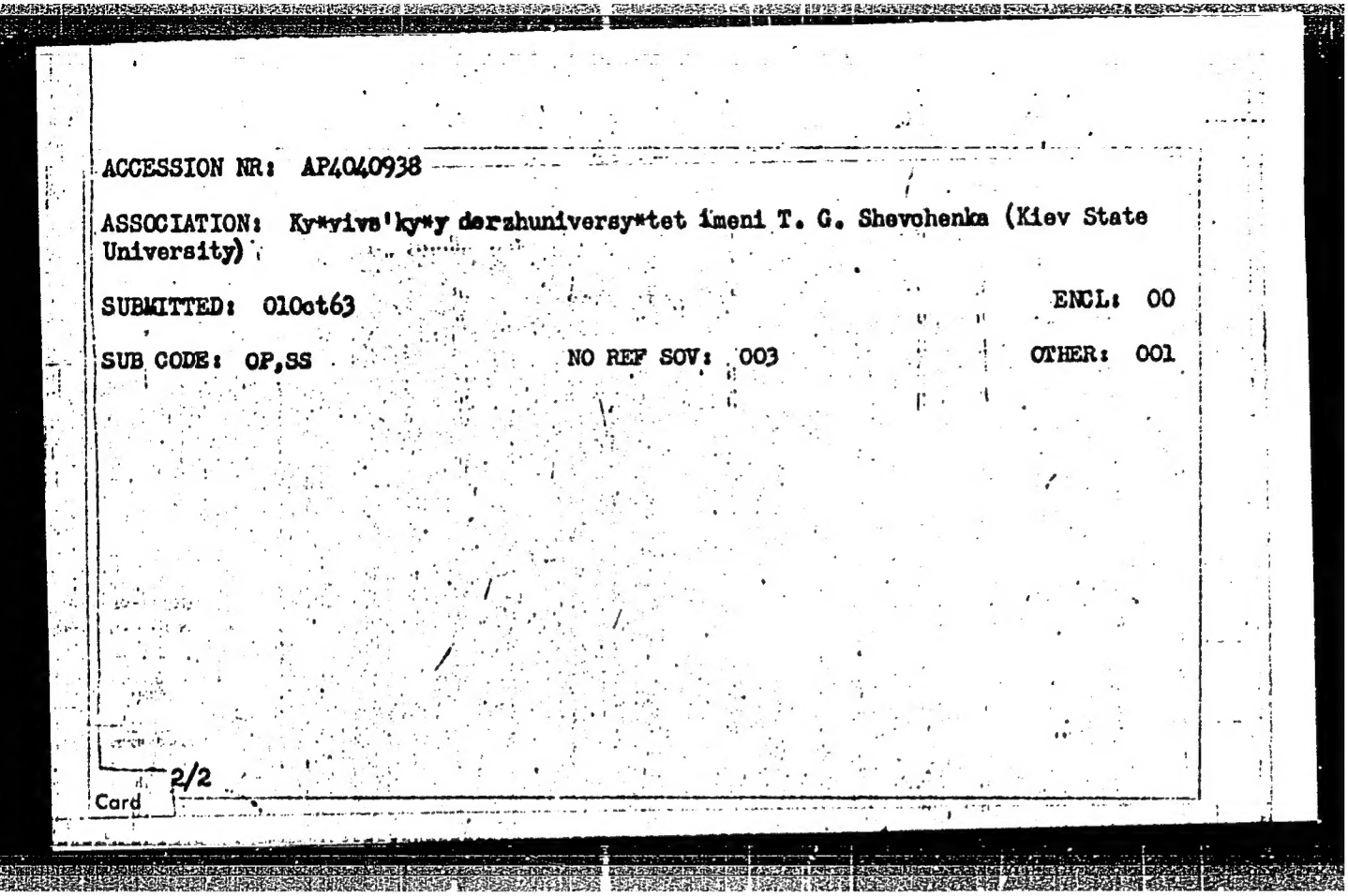

ACCESSION NR: AP4040938

ASSOCIATION: Ky*yivs'ky*y derzhuniversy*tet imeni T. G. Shevchenka (Kiev State University)

SUBMITTED: 010ct63 ENCL: 00

SUB CODE: OP,SS NO REF SOV: 003 OTHER: 001

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Card

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